

FOUR NEW SPECIES, TWO EACH OF *ATHLOPHORUS* AND
MACROPHYA (HYMENOPTERA: TENTHREDINIDAE)
FROM INDIA

MALKIAT S. SAINI, MAJOR SINGH, DEVINDER SINGH, AND TARLOK SINGH

Department of Zoology, Punjabi University,
Patiala, Punjab-147002, India

Abstract.—Four new species of Tenthredinidae, i.e., *Athlophorus vespiformis* and *A. bandatus* belonging to the Selandriinae (according to Malaise's classification) and *Macrophya gopeshwari* and *M. concolor* belonging to Tenthredininae are reported from India.

This is the third report in the series of papers dealing with new records of Symphyta from India. In it are described four new species, two each belonging to *Athlophorus* Burmeister (Selandriinae) and *Macrophya* Dahlbom (Tenthredininae). With this, the total number of so far described *Athlophorus* species comes to seven and of *Macrophya* to nine, from India. Since Cameron (1899), Rohwer (1912, 1916, 1921), Forsius (1930) and the comprehensive reviews by Malaise (1945, 1947) no new additions have been made to the list of Indian *Athlophorus* and only one to *Macrophya* by Mucho (1983). All holotypes are deposited in the F.R.I., Dehradun, U.P. India.

***Athlophorus vespiformis*, new species**

Description. Female: Length, 10.6 mm. Body fulvous to brown, with the following areas dark brown to black: antennal segments 6-9 and tip of 5th, middle fovea, areas surrounding supraclypeal pits, spot lateral to each posterior ocellus, spot on lower hind orbit, irregular large spot on lateral side of pronotum, triangular spot on mesonotal middle lobe, two spots on each lateral mesonotal lobe, posterior one-third of propleuron, irregular large spot on mesoepimeron, anteroventral border of episternum, mesosternum, entire metapostnotum, most of metapleuron and metasternum, lateral spots on first abdominal segment, proximal $\frac{2}{5}$ of abdominal terga 2-4 and 7-8, 5-6 entirely, abdominal sternites 4-6 and metacoxae; yellowish as follows: mouthparts, clypeus, a narrow stripe along inner and outer margins of eye, narrow anterior margin and spot on posteroventral margin of pronotum, two lateral spots on scutellum, spot on raised part of mesopleuron, posterodorsal border of meso- and metepimera, lateral spots on metanotum, distal border of abdominal segments 1-4 and 7-8. Wings hyaline. Forewing with deeply infuscated radial cell (Fig. 4), veins brown to black.

Clypeus semicircularly incised ($\frac{1}{3}$ depth of its mesial length) with distinct lateral teeth and with a transverse carina along its distal margin, labrum flat with roundly pointed anterior margin, malar space equal to diameter of an ocellus, inner margin of eyes slightly emarginate, lower interocular distance equal to eye length, ratio of distances from posterior ocellus to eye, between posterior ocelli and from posterior ocellus to hind margin of head, 0.75:0.25:1.0. Antenna $2 \times$ head width, 1st and 2nd

antennal segments each longer than broad, 3rd and 4th in ratio 6:5 (Fig. 8), 4-9 decreasing in length, antenna incrassate in middle. Frontal area raised to level of eyes, postocellar furrows sharp, postocellar area longer than broad in the ratio of 5:4, head carinate behind eyes.

Head with very fine and dense punctures, punctures less dense and minute on lower hind orbits. Frontal area with large and confluent punctures. Pronotum and mesonotal middle lobe densely and minutely punctured, lateral lobes with deep and dense punctures, scutellum with deep scattered punctures, appendage impunctate. Mesopleuron with large deep and dense punctures. Mesoepimeron and metaepimeron almost impunctate, mesosternum and metasternum finely punctured. Abdominal segments 1-3 impunctate, 4-9 minutely and uniformly punctured. Body covered with golden pubescence. Female lancet (Fig. 10).

Male: Length 9.8 mm, otherwise similar in all respects to female. Male genitalia (Figs. 12, 17).

Material examined. Holotype ♀, 20.6.83, collected from Mandal area (U.P.), India, 7,200 feet. Paratypes: 20♀♀, 12♂♂ with same data as the holotype.

Etymology. The name is based on its close resemblance with wasps.

Remarks. This species does not key past couplet 4 in Malaise's key (1947). This key can be modified as follows to insert this species:

4. The infuscation of the front wings prolonged in a mostly straight oblique line basal to stigma on both sides of subcosta, but decreasing in width and strength towards the base of the wing and may thus easily be overlooked basal to stigma (Plate I, B). Propodeum uniformly dull owing to minute and very dense punctures, only the extremely narrow (filiform) hind margin may be impunctate and shining. Postocellar area longer than it is wide, as 5:3; the lateral furrows faintly curved and rather sharp but not deep, and reaching little more than half way to the hypothetical hind margin of the head, but prolonged to it by distinct but very narrow, stripe-like seams. Frontal area ill-defined and likewise the antennal furrows lateral to it. Interantennal furrow deep and sharp. Antennae as long as head, thorax, and propodeum combined; the 3rd joint longer than the 4th one and the maximal width of the 6th and 5th joints subequal. Mesopleura with large scattered punctures, the surface between these with some scattered and very minute punctures, more or less shining. Abdomen strongly contracted behind the base. Hind basitarsus longer than the following tarsal joints combined. Length ♂ 10-10.5 mm; ♀ 11-12 mm 5
- Infuscation of the front wings not reaching basal to stigma 4a
- 4a. Head distinctly shining above, impunctate or with ill-defined punctures behind the eyes and ocelli 7
- Head with fine and dense punctures. Forewings hyaline except radial cell infuscated. Clypeus semicircularly incised with acute lateral teeth. Antenna incrassate in the middle and segments 3 and 4 in the ratio 6:5. Frontal area raised to level of eyes. Head carinate behind eyes. Mandal (U.P.), India 7,200 feet *Athlophorus vespiformis*, new species
5. Postocellar area and temples ...

***Athlophorus bandatus*, new species**

Description. Male: Length, 9.8 mm. Body black, with yellowish areas as follows: labrum, bases of mandibles, palpi, angles of clypeus, very narrow margin of inner orbits, distal $\frac{2}{3}$ of 2nd abdominal segment, a triangular stripe along proximal margin

of 4th segment, sternites 2–4 entirely, distal ends of all coxae, trochanters, and four front legs anteriorly; brownish black as follows: entire mesoleg posteriorly except yellowish proximal half of femur, distal $\frac{1}{2}$ of metatibia and entire tarsus. Wings hyaline. Forewing with a spot below stigma (Fig. 3), veins and stigma fulvous.

Clypeus semicircularly to squarely incised ($\frac{1}{3}$ depth of its medial length) with horizontal transverse carina along distal margin, labrum flat with roundly pointed anterior margin, malar space half diameter of ocellus. Inner margins of eyes slightly converging, lower interocular distance equal to eye breadth, ratio of distances from posterior ocellus to eye, between posterior ocelli and from posterior ocellus to hind margin of head 0.75:0.25:0.65. Antenna $2\frac{1}{2}\times$ head width, segments 1 and 2 each longer than broad, 3 as long as 4 (Fig. 7), 5–9 slightly compressed and decreasing in length. Frontal area depressed below level of eyes, postocellar furrows distinct, postocellar area as long as broad with distinct longitudinal middle carina; head carinate and narrowing behind eyes; scutellum pyramidally elevated.

Head finely and uniformly punctured, the distance between punctures almost equal to diameter of each puncture. Lower corners of pronotum and middle mesonotal lobe punctured similar to head. Mesonotal lateral lobes and scutellum with more dense and large punctures. Postscutellum with punctures similar to those of mesonotum. Elevation of mesopleuron densely and deeply punctured. Meso- and metasternum and metapleuron minutely punctured, metapostnotum and abdominal segments almost impunctate. Body covered with white pubescence. Male genitalia (Figs. 14, 18).

Female: Unknown.

Material examined: Holotype δ , 20.6.83, collected from Mandal area (U.P.), India, 7,200 feet. Paratype: 1 δ with same data as holotype.

Etymology. The name is based on the prominent band on the abdomen.

Remarks. This species does not key past couplet 1 in Malaise's key (1947). The key can be modified as follows to key out this species:

- | | | |
|-----|--|---|
| 1. | Front wings with a strongly infuscated spot | 1a |
| – | Wings faintly hyaline, almost clear, and without infuscated spot in the radial cells. | |
| | Antennae slender | 2 |
| 1a. | Front wing with a strongly infuscated spot covering basal half of radial cell. Body including antenna black, anterior side of four front legs yellowish, clypeus semicircularly to squarely incised. Malar space half diameter of ocellus, inner margins of eyes slightly converging. Antenna slightly compressed and equal to $2\frac{1}{2}\times$ head width, antennal segment 3 as long as 4. Frontal area depressed below level of eyes. Head not carinate. Mandal (U.P.), India, 7,200 feet | <i>Athlophorus bandatus</i> , new species |
| – | Front wings with a strongly infuscated spot, covering most of the radial cells | 3 |

***Macrophya gopeshwari*, new species**

Description. Male: Length 9.2 mm. Antenna and head black, yellowish white as follows: palpi, proximal half of mandibles, labrum, irregular spots on lower inner and outer orbits, a triangular spot on middle fovea and two lateral spots on postocellar area. Thorax black, yellowish white as follows: posterior and posteroventral margins of pronotum, proximal $\frac{2}{3}$ of tegulae, a V-shaped mark on posterior tip of mesonotal middle lobe, anterior slope of scutellum, irregular spot on anterior aspect of meso-

pleuron, posterodorsal angles of mesoepimeron. Abdomen brownish black except two yellowish spots on lateral side of first two segments. Legs yellowish white, black as follows: posterior side of four front legs up to middle of femur (irregular spots on outer sides of coxae), distal $\frac{2}{3}$ of metafemur, entire metatibia, apical $\frac{2}{3}$ of last tarsal segments and all basitarsi except their extreme tips. Forewing hyaline with apex weakly infumate (Fig. 2), veins and stigma brownish black.

Clypeus semicircularly incised ($\frac{1}{2}$ depth of its medial length), labrum flat with narrowly rounded anterior margin. Malar space almost equal to diameter of an ocellus, inner margins of eyes slightly emarginate and converging downward, lower interocular distance equal to eye length, ratio of distances from posterior ocellus to eye, between posterior ocelli, and from posterior ocellus to hind margin of head, 0.75:0.25:0.50. Antenna $3\times$ the head width, incrassate in middle, strongly compressed, tapering towards apex, two basal segments as long as broad, segment 3 and 4 in ratio 6:5 (Fig. 6). Supraclypeal pits distinct, frontal area ill-defined and depressed below level of eyes, postocellar furrows weak, postocellar area as long as broad. Head carinate and strongly converging behind eyes.

Head with minute, scattered punctures, mesonotum with dense and small punctures and the distance between punctures equal to $\frac{1}{2}$ diameter of a puncture, anterior slope of scutellum with slightly larger punctures, appendage and postscutellum densely punctured, mesopleuron distinctly punctured, punctures on mesosternum similar to that of mesonotum, metapleuron and metasternum finely punctured. Abdomen minutely punctured except impunctate stripes along posterior borders of all terga. Body covered with silvery pubescence. Male genitalia (Figs. 13, 16).

Female: Unknown.

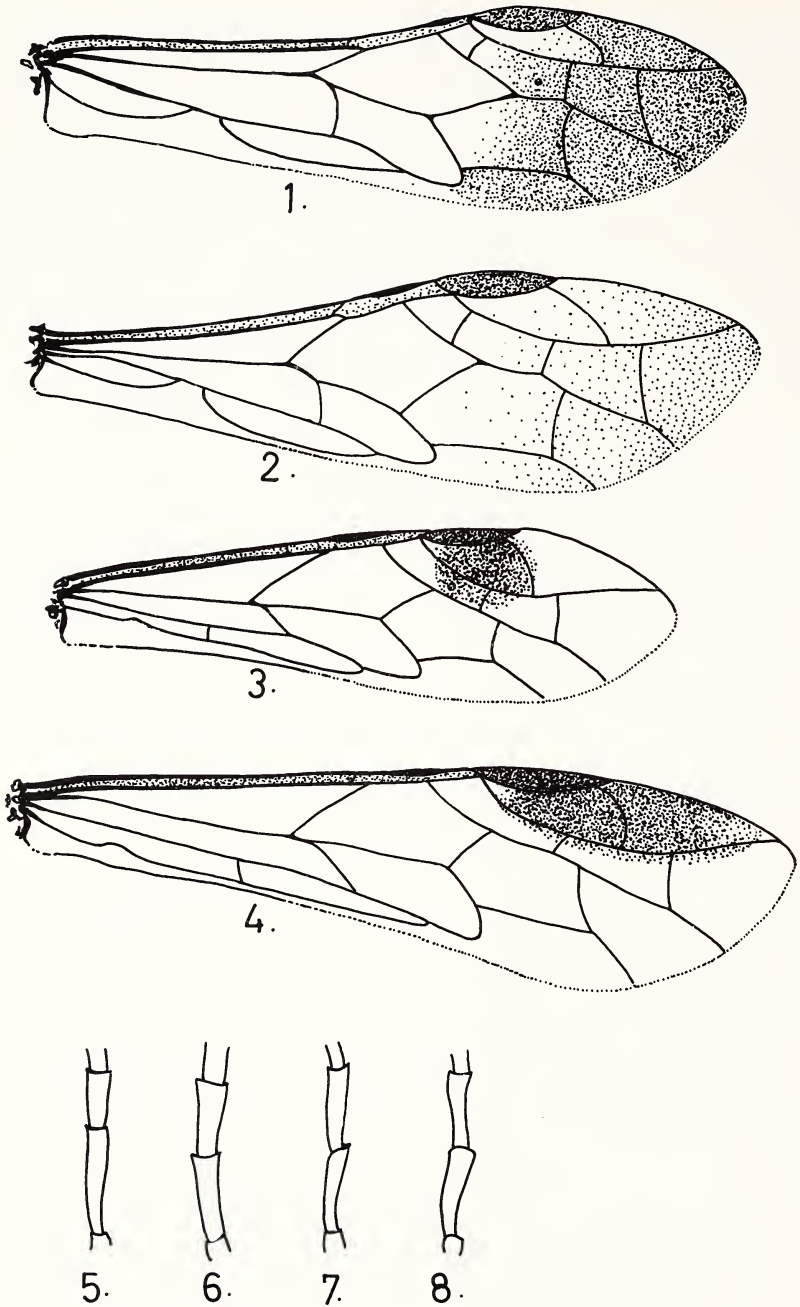
Material examined. Holotype δ , 20.6.1983, collected from Mandal area (U.P.), India, 7,200 feet.

Etymology. The name is from the city near the type locality.

Macrophya concolor, new species

Description. Female: Length, 10.8 mm. Body black, yellowish brown areas as follows: labrum except irregular black spot in the middle of its proximal half and palpi. Yellowish white as follows: distal $\frac{2}{3}$ of clypeus, posterodorsal pronotal angles, lateral spots on abdominal segments 2–8, lateral stripe on metacoxae, all trochanters, proximal and distal ends of four front femora, a longitudinal stripe along anterior border of profemur, four front tibiae anteriorly, metatibia with irregular spot on posterior side and proximal tips of metafemur. Forewing infuscated towards tip (Fig. 1), infuscation extending up to base of stigma, hindwing subinfumated toward tip.

Clypeus semicircularly incised ($\frac{2}{3}$ depth of its medial length), labrum convex in middle and deflexed along lateral sides having narrowly rounded anterior margin. Malar space wanting, inner margin of eyes emarginate and converging downwards, lower interocular distance $\frac{3}{4}$ of eye length; ratio of distances from posterior ocellus to eye, between posterior ocelli, and from posterior ocellus to hind margin of head 1.0:0.35:0.5. Antenna equal to $1.7\times$ head width and incrassate in middle, segment 1 longer than broad, 2 as long as broad, 3 and 4 in the ratio 7:4 (Fig. 5), 4–9 gradually decreasing in length. Frontal area raised to level of eyes, inter- and circumocellar furrows indistinct, postocellar furrows faint, supra-antennal tubercles low, head car-



Figs. 1-8. 1. Forewing of *Macrophyta concolor*. 2. Forewing of *Macrophyta gopeshwari*. 3. Forewing of *Athlophorus bandatus*. 4. Forewing of *Athlophorus vespiformis*. 5. Third and fourth

inate and slightly converging behind eyes. Postocellar area broader than long in the ratio of 4:3.

Head with dense punctures all over, pronotum and mesonotum densely punctured, posterior slope of scutellum with deep and large punctures, area between punctures shining. Postscutellum with very minute punctures, mesopleuron with deep and dense punctures, sternum with punctures similar to notum, metapleuron and metasternum punctured similarly to mesosternum. Abdomen almost impunctate except lateral sides of first segment which are deeply and densely punctured. Except abdomen, body covered with silvery pubescence. Female lancet as in Figure 9.

Male: Length 9.2 mm; differs from female in having mesosternum with a triangular yellowish white spot, metacoxae anteriorly with white longitudinal irregular spots, mesocoxae almost yellowish white, pro- and mesolegs yellowish white anteriorly, metacoxa without a yellowish white lateral stripe, pronotal angles similar to body color, sternites 2–6 with yellowish white lateral stripes. Male genitalia (Figs. 11, 15).

Material examined. Holotype ♀, 15.6.1983, collected from Mandal area (U.P.), India, 7,200 feet. Paratypes: 1♀, 7♂♂ with same data as holotype.

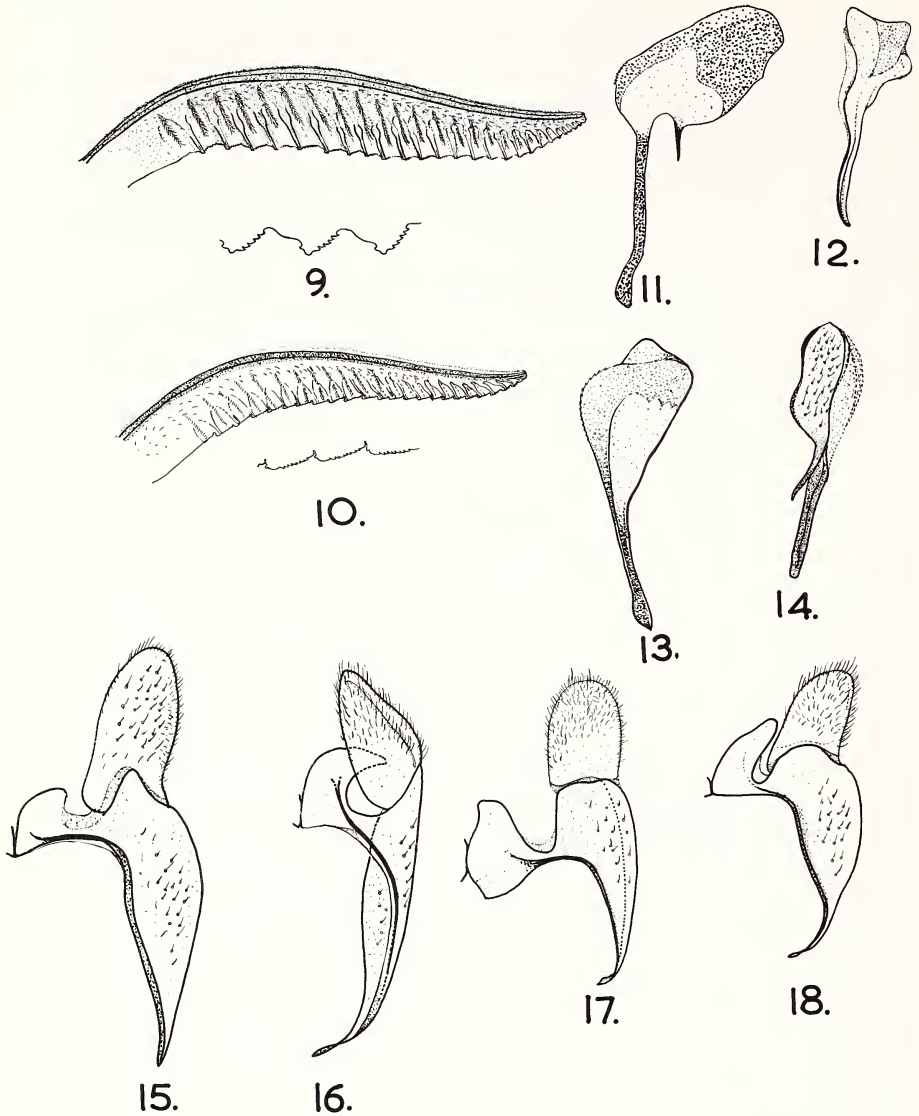
Etymology. This species is named after its almost uniform body colour.

Remarks. These species do not key past couplet 9 in Malaise's key (1945). The following new section can be inserted to key out these species:

9. Scutellum with an acute, mostly edge-like transversal carina along the hind margin, mostly elevated into an acute point in the middle. The anterior margin of scutellum shallowly emarginate or subtruncate. Face between the eyes distinctly depressed below a level touching both eyes, and ocelli barely reaching that same level. The apical half of both wings strongly infumated. Head and thorax strongly and densely punctured, opaque. Sculpture of face almost wanting, and remnants of the antennal furrows remaining as punctiform and deep pits on each side of the indistinct frontal area. Postocellar area subconvex, narrowing anteriorly, the width behind compared to the length in the middle as 3:2; the lateral furrows very deep; the post- and interocellar furrows distinct, the former ones angulate. Head very strongly narrowing behind the eyes and there strongly carinate. Antennae as long as abdomen, distinctly incrassated and somewhat compressed in the middle, joints 3 and 4 as 4:3. Mesopleura bluntly raised below. Metaepimera without appendage. The hind metatarsi longer than all following joints combined. Black; the 5 basal segments of abdomen dark reddish. Yellowish white are: mouthparts, pronotal margins, base of tegulae, middle of scutellum, the anterior-side of the front legs, and on the hind legs: trochanters, a stripe on coxae, basal $\frac{2}{3}$ of tibiae, basal half of femora in the ♀ and a stripe-like spot on the knees in both sexes. Length ♂ 8–9, ♀ 11–12 mm (20♂♂, 20♀♀). Burma (Shan States): Tonkin (Xieng Khouang: Ban Sai): 1,000–1,500 m *M. hastulata* Konow, 1898A
- Scutellum without transverse carina, clypeus shallowly to deeply incised, face not depressed viz., the frontal area hardly and ocelli not below a level touching both eyes 9a
- 9a. Clypeus black, mouthparts and labrum yellowish white, two yellowish spots on post-

←

antennal segments of *M. concolor*. 6. Third and fourth antennal segments of *M. gopeshwari*. 7. Third and fourth antennal segments of *A. bandatus*. 8. Third and fourth antennal segments of *A. vespiformis*.



Figs. 9-18. 9. Female lance of *Macrophya concolor*. 10. Female lance of *Athlophorus vespiformis*. 11. Penis valve of *M. concolor*. 12. Penis valve of *A. vespiformis*. 13. Penis valve of *Macrophya gopeshwari*. 14. Penis valve of *Athlophorus bandatus*. 15. Harpe and parapenis of *M. concolor*. 16. Harpe and parapenis of *M. gopeshwari*. 17. Harpe and parapenis of *A. vespiformis*. 18. Harpe and parapenis of *A. bandatus*.

- ocellar area. Yellowish-white V-shaped mark on posterior tip of mesonotal middle lobe. Abdomen brownish black with two yellowish spots on lateral side of first two segments. Forewing hyaline with apex weakly infumated. Head strongly converging behind eyes. Postocellar area as long as wide. Antennal segments 3 and 4 as 6:5. The hind basitarsus shorter than the following joints combined. Mandal (U.P.), India, 7,200 feet *Macrophya gopeshwari*, new species
- The hind basitarsus longer than the remaining tarsal joints combined 9b
- 9b. Distal $\frac{2}{3}$ of clypeus black, basal $\frac{1}{3}$ white, mouthparts and labrum yellowish brown, general colour black, yellowish white lateral spots on abdominal segments 2–8. Forewing strongly infuscated to base of stigma. Head slightly converging behind eyes. Postocellar area broader than long in the ratio of 4:3. Antennal segments 3 and 4 as 7:4. Forewing infuscated towards tip and infuscation extending up to base of stigma. Mandal (U.P.), India, 7,200 feet *Macrophya concolor*, new species
- If apex of wings is somewhat infumated then that infumation does not reach the base of stigma or is not conspicuous 10

ACKNOWLEDGMENT

The authors are deeply thankful to ICAR, New Delhi for the financial assistance to the project under which this work has been completed.

LITERATURE CITED

- Cameron, P. 1899. Hymenoptera orientalia or contributions to a knowledge of the Hymenoptera of the oriental Zoological region. Part VIII. The Hymenoptera of Khasia Hills: first paper. Mem. Proc. Manchester Lit. Phil. Soc. 43:1–50.
- Forsius, B. 1930. A new genus of the tribus Hoplocampini from Palestine. Not. Entomol. 10: 103–104.
- Malaise, R. 1945. Tenthredinoidea of South East Asia with a general zoogeographical review. Opusc. Entomol. Supplementum IV:1–288.
- Malaise, R. 1947. Entomological results from the Swedish expedition 1934 to Burma and British India. Hym. Tenthredinoidea. Ark. Zool., pp. 1–39.
- Muche, W. H. 1983. Die von Herrn Dr. W. Wittmer in Indien und Bhutan gesammelten Blattwespen, mit Beschreibung von sechs neuen Arten der Tenthredinidae (Hymenoptera, Symphyta). Reichenbachia 21(29):167–180.
- Rohwer, S. A. 1912. Notes on sawflies, with descriptions of new species. Proc. U.S. Natl. Mus. 43:205–251.
- Rohwer, S. A. 1916. Chalastogastra (Hym.). Suppl. Ent. No. 4:81–113.
- Rohwer, S. A. 1921. Notes on sawflies, with descriptions of new genera and species. Proc. U.S. Natl. Mus. 59:83–109.

Received June 15, 1984; accepted July 10, 1985.